CROTON BIGBENDENSIS (EUPHORBIACEAE), A NEW SPECIES FROM TRANS-PECOS, TEXAS

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ABSTRACT

Croton bigbendensis B.L. Turner, sp. nov., is described from Trans-Pecos, Texas. It is closely related to *C. dioicus* Cav. and has passed for that species in most treatments of *Croton* for the Southwestern United States and Mexico. *Croton bigbendensis* is largely confined to the lower elevations of the Big Bend Region in Brewster, Presidio, and Hudspeth counties where it dominates sandy flats along the Rio Grande. It is readily distinguished in the field by its bushy habit, and elongate upper internodes, the latter having linear-lanceolate leaves. So far as known, it does not co-occur with *C. dioicus*, nor does it appear to intergrade with the latter in regions of near contact.

KEY WORDS: *Croton*, *C. dioicus*, Euphorbiaceae, Texas

RESUMEN

Se describe ***Croton bigbendensis*** B.L. Turner, sp. nov., de Trans-Pecos, Texas. Está muy emparentada con *C. dioicus* Cav. y ha pasado por tal especie en la mayoria de los tratamientos de *Croton* para el suroeste de los Estados Unidos y México. *Croton bigbendensis* está confinado a las pequeñas elevaciones de la región de Big Bend en los condados de Brewster, Presidio y Hudspeth donde domina a lo largo de las llanuras arenosas del Río Grande. Se distingue fácilmente en el campo por su hábito arbustivo, e internudos superiores elongados, los últimos con hojas linear-lanceoladas. Por lo conocido hasta ahora no convive con *C. dioicus*, ni tampoco parece intergradarse con él en las regiones de contacto cercano.

Field work in the Trans-Pecos region over a several year period has convinced me that there exists an undescribed species of *Croton*, this long hidden within the taxonomic fabric of *C. dioicus*. Its description follows:

Croton bigbendensis B.L. Turner, sp. nov. **(Figs. 1,2,3)**. TYPE: U.S.A. TEXAS: PRESIDIO CO.: ca. 20 mi W of Hwy. 90 along county road 2017 (dirt road to the Rio Grande), sandy flats along old flood plain of Rio Grande, 22 Aug 2002, *B.L. Turner 22-204A* (pistillate) and *22-204b* (staminate) (HOLOTYPE: TEX; ISOTYPES: MEXU, SRSC).

Similis *Croton dioico* Cav. sed herba suffruticosa aut suffrutex est ad 0.5 m altus, ramosissimus e basi caulibus super elongatis cum nodis foliis anguste lanceolatis pro parte maxima 1.5–3.0 plo longioribus.

Suffruticose perennial herbs or subshrubs mostly 40–60 cm high, the stems arising from lignescent tap roots. **Stems** densely pubescent with sessile peltate scales, the latter ca. 0.4 mm across. **Lower leaves** lanceolate; uppermost internodes elongate, bearing linear-lanceolate leaves 5–7 times as long as wide, pubescent like the stems. **Staminate flowers** with mostly (8–)9–12(–15) stamens;

filaments pilose, 1.5–2.0 mm long. **Pistillate flowers** with style branches ca. 1 mm long, fruits globose, ca. 5 mm long, 5 mm wide. Chromosome number, 2n = 28.

Representative Specimens: **UNITED STATES. TEXAS: Brewster Co.** Castalon Ranger Station, 17 Aug 1972, *Bacon & Hartman 1438* (LL); Big Bend Natl. Park, Chisos Mts., 26 Jun 1937, *Marsh 41* (TEX); flats N of Chisos Mts., 8 Jul 1932, *Muller s.n.* (TEX); near upper Tornillo Creek Bridge, "subshrub to 0.5 m high," 28 Apr 1984, *Powell & Powell 4329* (TEX); 24.9 mi S of Marathon, 16 Jun 2003, *Turner 23-152* (TEX); 25.7 mi along La Linda highway from highway 385, 16 Jun 2003, *Turner 23-155* (TEX); 4 mi S of highway 2627 along dirt road to Brushy Creek Canyon, 17 Jun 2003, *Turner & Dodson 23-163* (TEX); between Todd Hill and Burro Mesa, yellow clay soils, 3200–3500 ft, 1 Aug 1955, *Warnock 12789* (LL, SRSC); Nine Point Mesa Ranch, 22 Apr 1998, *Webster & Westlund 32586* (TEX); near Rio Grande, creek bottoms, Compton Place, 30 Aug 1910, *Young s.n.* (TEX). **Hudspeth Co.:** ca. 5 mi S of Finley RR Station, along dirt road to IH 10, 3 Sep 2002, *Turner 22-226* (SRSC, TEX); 6 mi W of Fort Hancock, 7 Sep 1955, *Warnock 13767* (SRSC). **Presidio Co.:** Big Bend Ranch along Rio Grande, mouth of Canyon Colorado, 5 Oct 1975, *Butterwick & Lamb 1771* (TEX); 4.5 mi N of Ruidosa, 29 May 1941, *Hinckley 1541* (TEX); 3 mi N of Candelaria, 3 Sep 2000, *Billie & Matt Turner 20-508* (MEXU, NY, SRSC, TEX).

MEXICO: CHIHUAHUA. Mpio. Manuel Benavides, ca. 7 mi W of Providencia, silty desert plains, locally abundant, 10 Aug 1940, *L.M. Johnston & Muller 106* (LL).

The species is named for the Big Bend region of Texas and closely adjacent Mexico, to which it is largely restricted.

Altogether, 44 collections of *C. bigbendensis* were examined in this study (LL, SRSC, TEX): 22 from Brewster Co.; 18 from Presidio Co.; and two from Hudspeth Co. Only a single collection was examined from Mexico, this cited in the above.

Johnston (1959) provided a detailed treatment of the Texas species of *Croton*. In this he noted that *C. dioicus* is typified by material collected in the state of Hidalgo, Mexico. He further commented that it is a "widespread" (distributed from Texas to southern Mexico) and "somewhat weedy" taxon, occurring "in disturbed ground along roads and railroads." In spite of the fact that he knew the Trans-Pecos region quite well, he did not discern the species proposed herein.

Finally, it should be emphasized that, to my knowledge, the two species do not occur together, nor do they appear to intergrade in regions of near contact (cf. figs. 4 and 5), hence my recognition of *C. bigbendensis* as a good biological species. Such "cryptic species" are becoming increasingly common in Texas, even in regions that have been well studied: for example, the two new species of *Liatris* created out of the fabric of *Liatris punctata* Hook. (Nesom & O'Kennon 2001), and that of *Nemophila saycrsensis* carved out of the previously well-studied *N. phacelioides* Nutt., Simpson et al. 2001).

Lectotypification

Johnston (1959) placed *C. neomexicanus* Muell. Arg. in synonymy with *C. dioicus*, having not seen type material, although he was aware that several early workers had taken up the name *C. neomexicanus* for what should have been called *C. dioicus*. Indeed, early on I thought the former name might apply to what I describe herein as *C. bigbendensis*. To resolve this issue I borrowed type

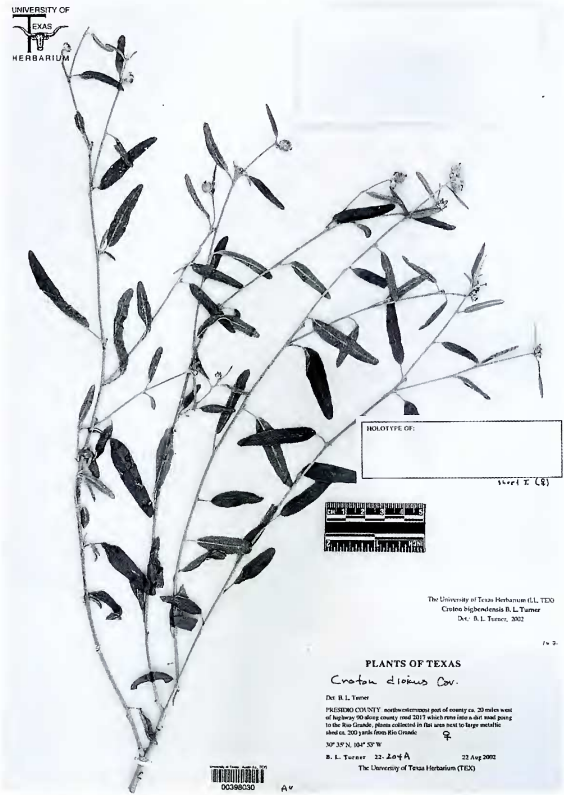

FIG. 1. *Croton bigbendensis;* holotype (*B.L. Turner 22-204A,* pistillate, TEX)

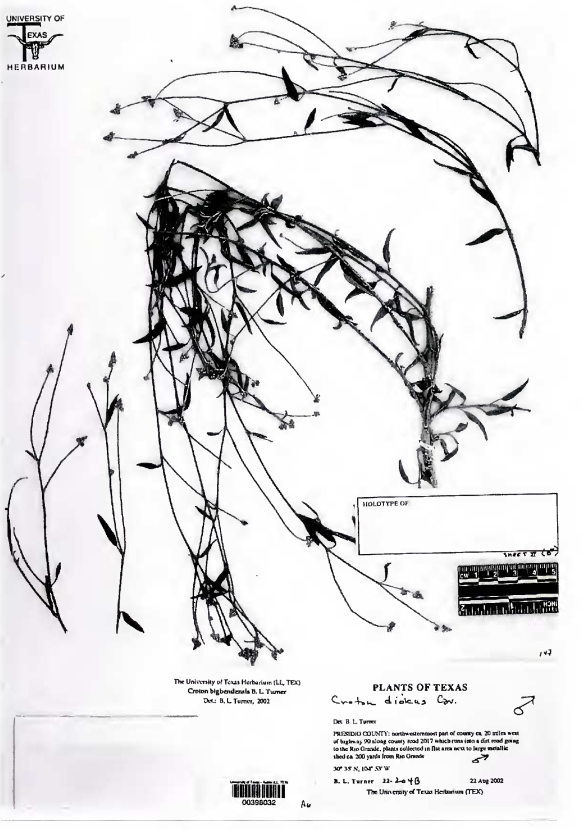

FIG. 2. *Croton bigbendensis;* holotype (*B.L. Turner 22-204b,* staminate, TEX)

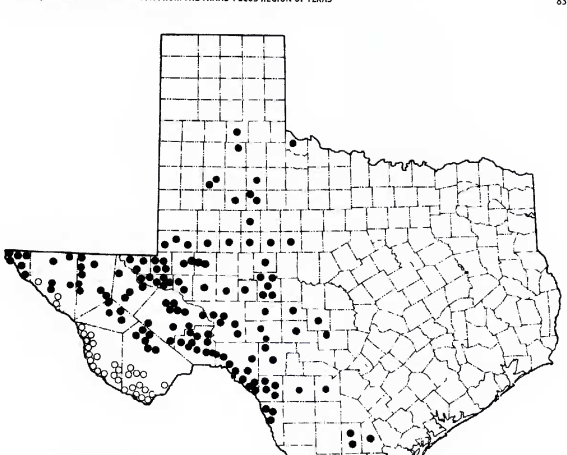

FIG. 3. Distribution of *Croton bigbendensis* and *C. dioicus* in Texas.

materials of *C. neomexicanus* from several institutions, the taxon itself typified by diverse collections, some of these said to have been collected by Charles Wright in the Trans-Pecos region of Texas. Clearly the name needed lectotypification, which follows.

In the protologue of *C. neomexicanus*, its author cited three collections: *Charles Wright 1800*, w/o locality, 1851–52; *Charles Wright 642* "Expedition from western Texas to El Paso, New Mexico, May-October, 1849;" and *Berlandier 3211*, Mexico: Nuevo Leon "in campsis," Jun 1844. Specimens of these several collections were borrowed from GH and NY. From among these *Wright 1800* (GH) was selected as a suitable lectotype; isolectotypes were also recorded at GH and NY. The lectotype has both male and female plants mounted on the same sheet, as does the GH isolectotype, the latter mounted on the same sheet with *Wright 642* (a paratype). All of the specimens concerned are quite similar, possessing the habit, upper nodes, and leaf shape of rather typical *C. dioicus*.

Fig. 4. Typical habit of *C. dioicus* (left); habit of living holotype of *Croton bigbendensis* (right).

Fig. 5. Typical aspect of early spring population of *Croton bigbendensis* (ca. 15 mi. NW of Presidio, Texas; note the bushy rounded habit of the plants concerned; individual in foreground is Bill Dodson, father of the sheriff of Brewster Co., Texas).

Chromosome numbers

Urbatsch et al. (1975) reported chromosome counts for 11 collections of *C. dioicus* (nine of these were diploid with 2n = 28, and two tetraploid with 2n = 56 pairs). Examination of the vouchers concerned (LL,TEX) revealed that only one of these (Brewster Co: *Bacon & Hartman 1438*) belonged to what is here described as *C. bigbendensis*. Since chromosome numbers of the *C. dioicus* collections included both diploids and tetraploids, chromosome number alone is not useful in distinguishing between the two taxa.

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